Tutorial
H-1000-5324-01-A

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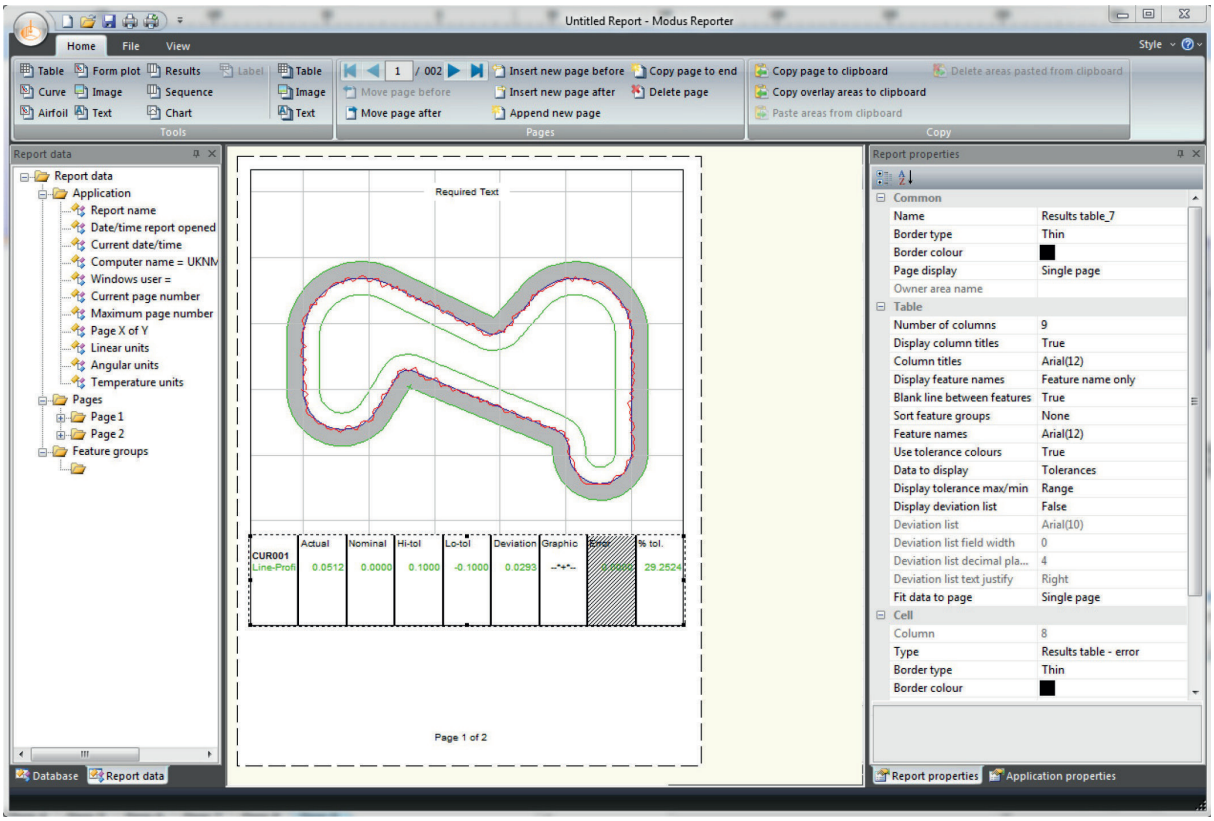
Further reporting



Renishaw part no: H-1000-5324-01-A

Issued: 12 2013

Further reporting

Care of equipment

Renishaw probes and associated systems are precision tools used for obtaining precise measurements and must therefore be treated with care.

Changes to Renishaw products

Renishaw reserves the right to improve, change or modify its hardware or software without incurring any obligations to make changes to Renishaw equipment previously sold.

Warranty

Renishaw plc warrants its equipment for a limited period (as set out in our Standard Terms and Conditions of Sale) provided that it is installed exactly as defined in associated Renishaw documentation.

Prior consent must be obtained from Renishaw if non-Renishaw equipment (e.g. interfaces and/or cabling) is to be used or substituted. Failure to comply with this will invalidate the Renishaw warranty.

Claims under warranty must be made from authorised service centres only, which may be advised by the supplier or distributor.

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Contents

1 Further reporting

1.1 Tutorial pre-requisites

- The student should have completed tutorials that cover basic measurement techniques, in particular ‘Curve scanning considering all 5-axis benefits / influences’
- The student should have completed ‘Create a user defined PDF report using MODUS reporter’ tutorial

1.2 Tutorial objectives

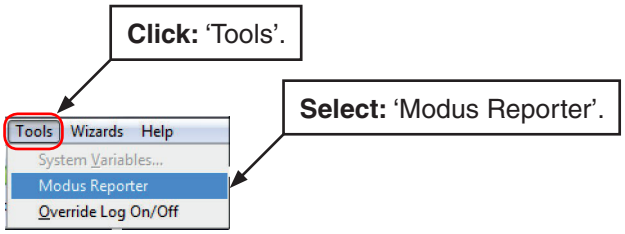
- Further exposure to methods of graphical reporting
- Consideration of enhanced display techniques to further communicate graphical and numerical results

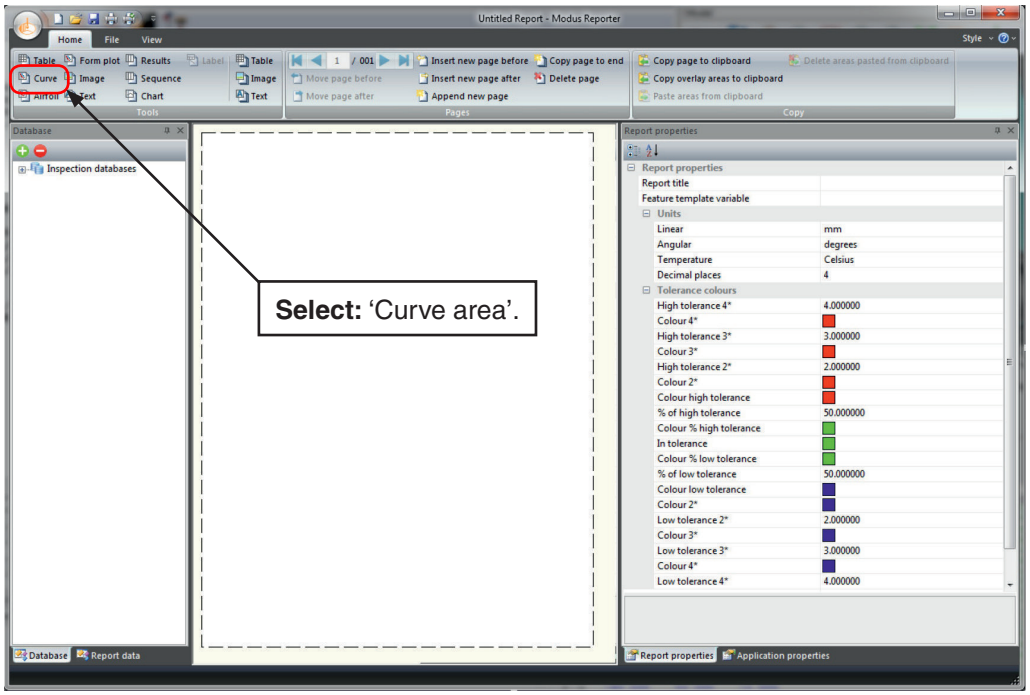
2 Introduction

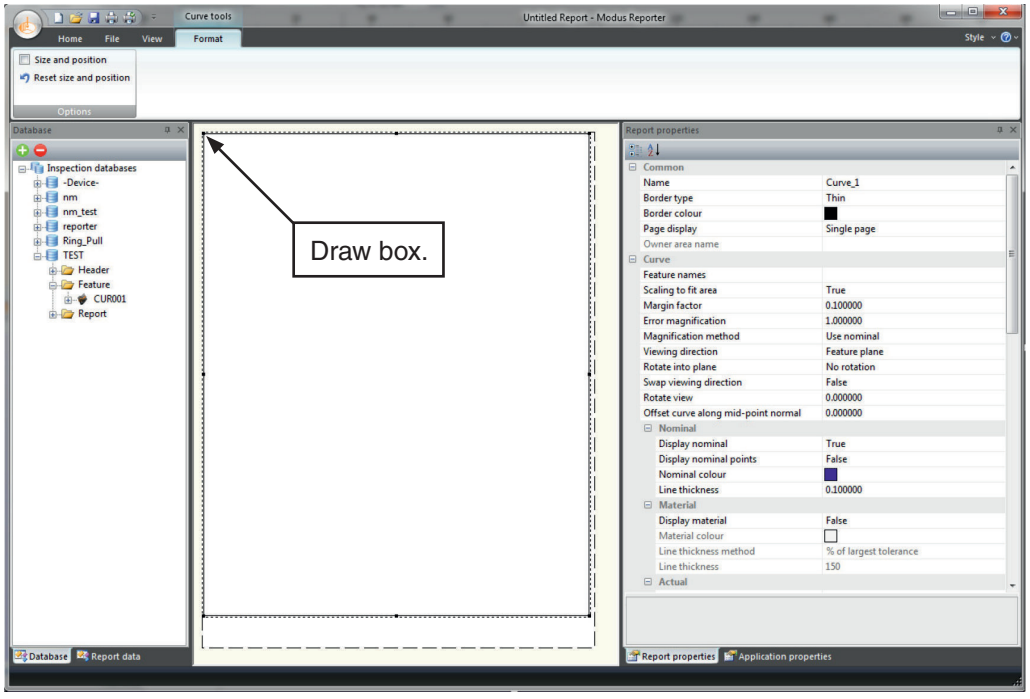
In this tutorial the student will explore wider options within MODUS reporter to create scaled graphical representations of measured results.

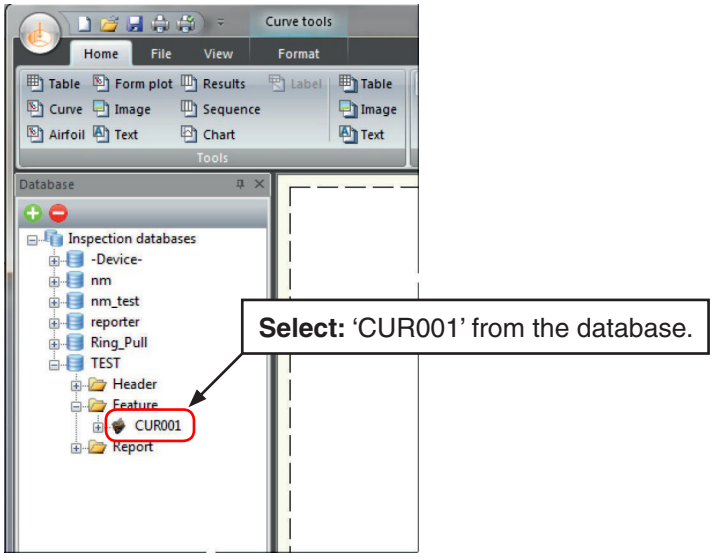
3 Creation and printing of a report for plotting a 2D curve

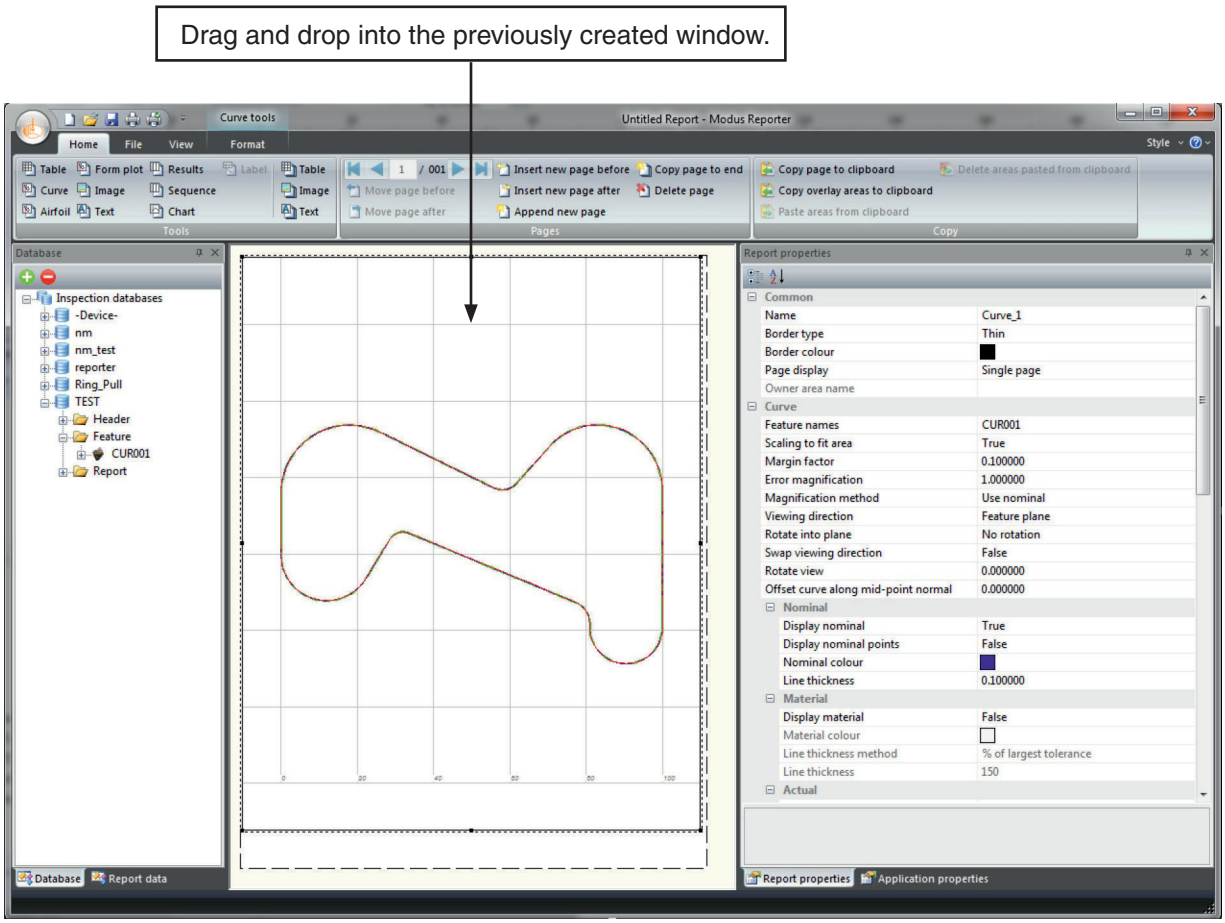
Before starting this section of the tutorial, ensure that the racetrack profile (or other 2D curve) has been measured and inputted.



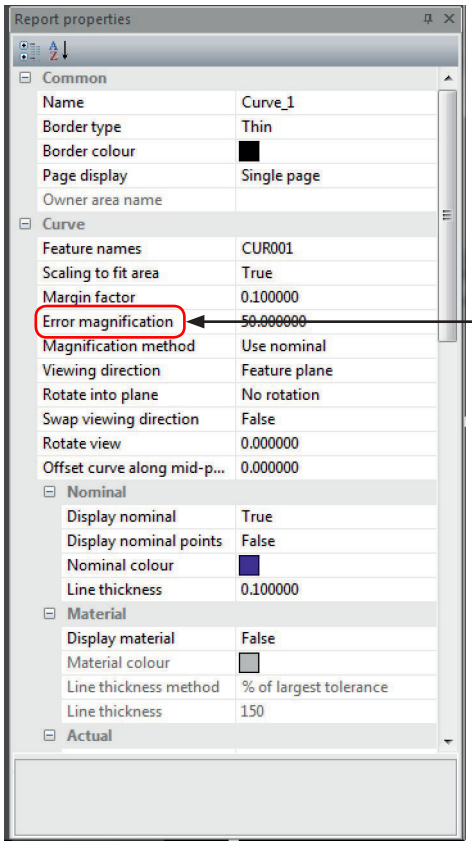





Curve tools
Home
File
View
Format
Table
Form plot
Results
Label
Curve
Image
Sequence
Airfoil
Text
Chart
Tools
Database
Inspection databases
-Device-
nm
nm_test
reporter
Ring_Pull
TEST
Header
Feature
CUR001
Report
Select: 'CUR001' from the database.

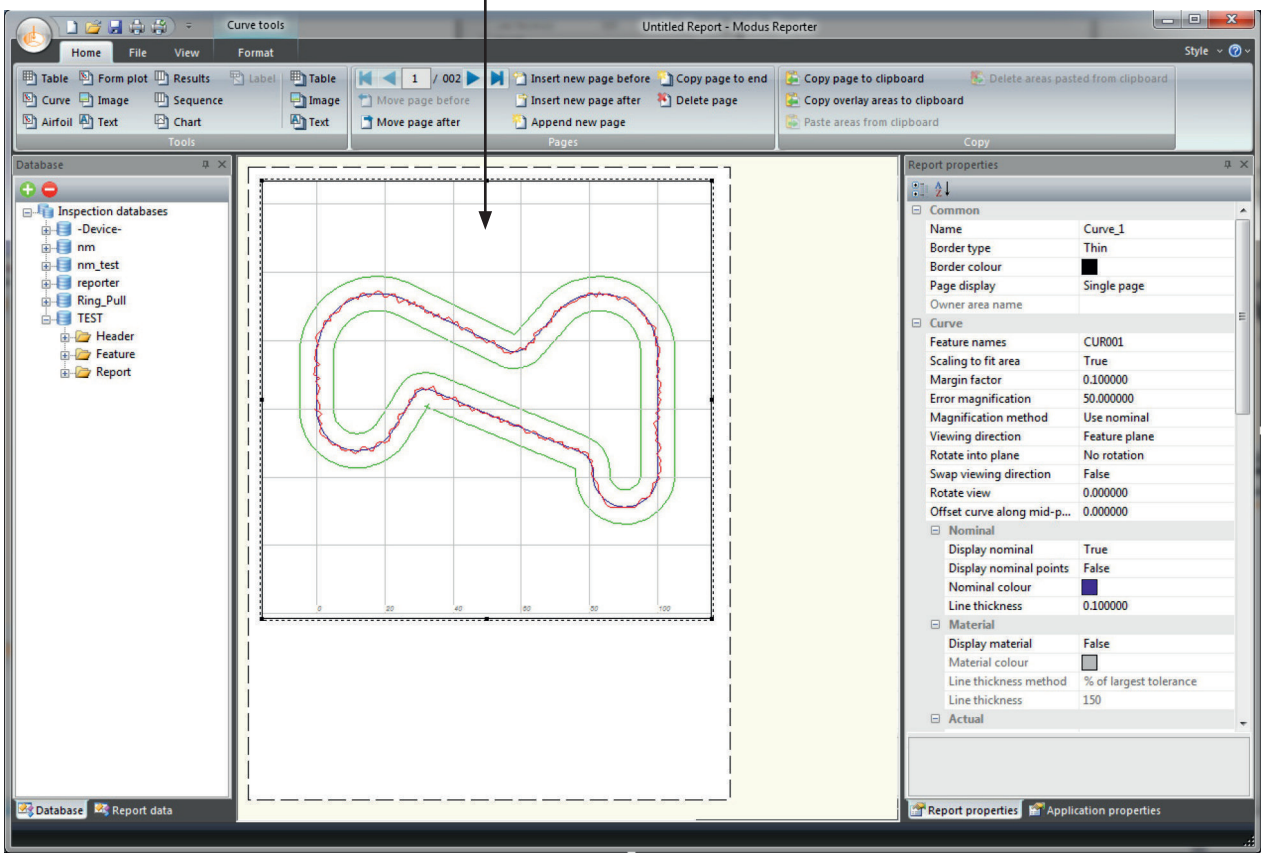

Drag and drop into the previously created window.
Untitled Report - Modus Reporter
Curve tools
Home
File
View
Format
Style
Insert new page before
Insert new page after
Append new page
Copy page to end
Delete page
Copy page to clipboard
Copy overlay areas to clipboard
Paste areas from clipboard
Delete areas pasted from clipboard
Tools
Pages
Copy
Database
Inspection databases
-Device-
nm
nm_test
reporter
Ring_Pull
TEST
Header
Feature
CUR001
Report
Report properties
Common
Name
Curve_1
Border type
Thin
Border colour
Page display
Single page
Owner area name
Curve
Feature names
CUR001
Scaling to fit area
True
Margin factor
0.100000
Error magnification
1.000000
Magnification method
Use nominal
Viewing direction
Feature plane
Rotate into plane
No rotation
Swap viewing direction
False
Rotate view
0.000000
Offset curve along mid-point normal
0.000000
Nominal
Display nominal
True
Display nominal points
False
Nominal colour
Line thickness
0.100000
Material
Display material
False
Material colour
Line thickness method
% of largest tolerance
Line thickness
150
Actual
Database
Report data
Report properties
Application properties

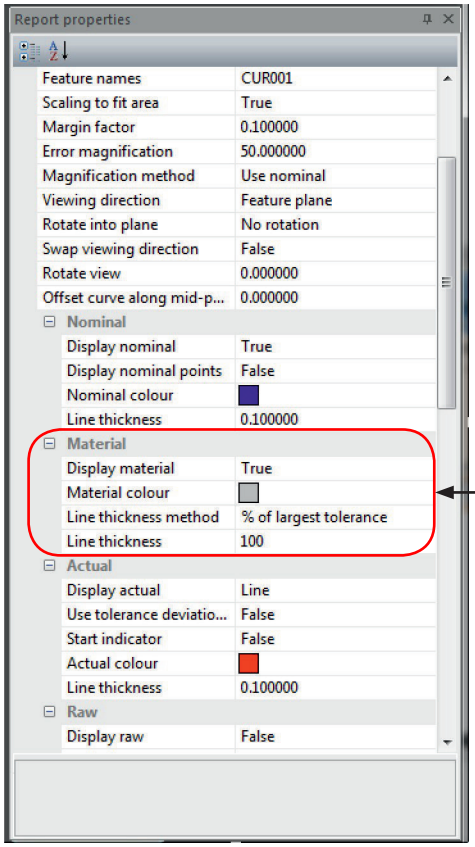
With the ‘Curve’ area window selected the ‘Report properties’ dialogue box will become active:



Highlight the ‘Error magnification’ and adjust as applicable.

Select: ‘F5’ to refresh.

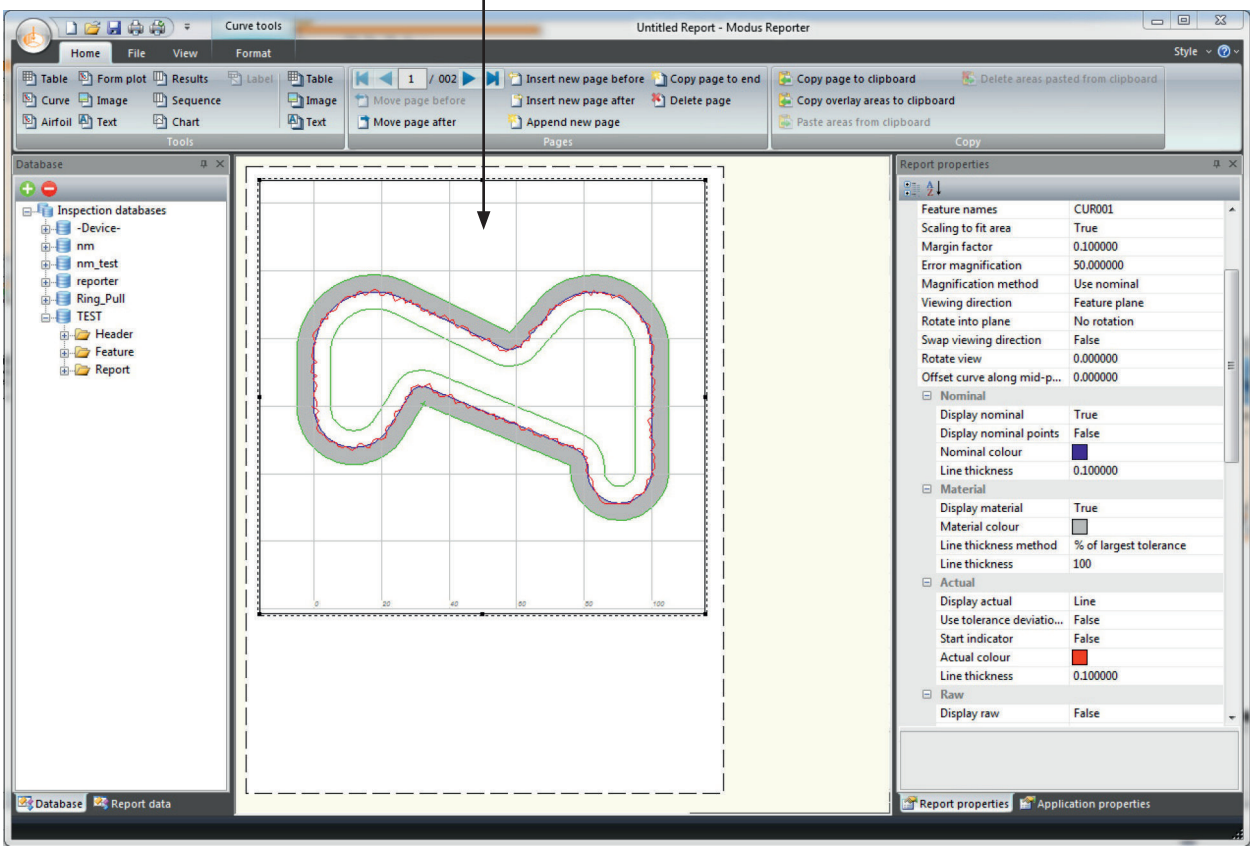




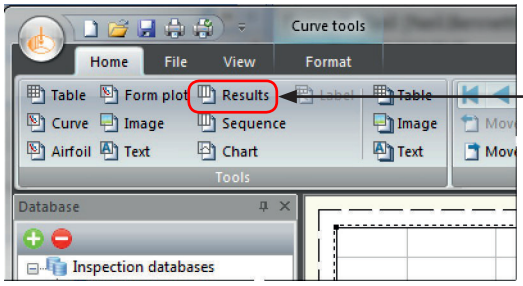
From within the ‘Report properties’, display the ‘Material’ for visualisation.

The colour and thickness can be adjusted to suit.

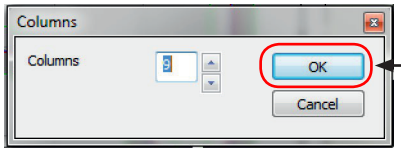
Select: ‘F5’ to refresh.



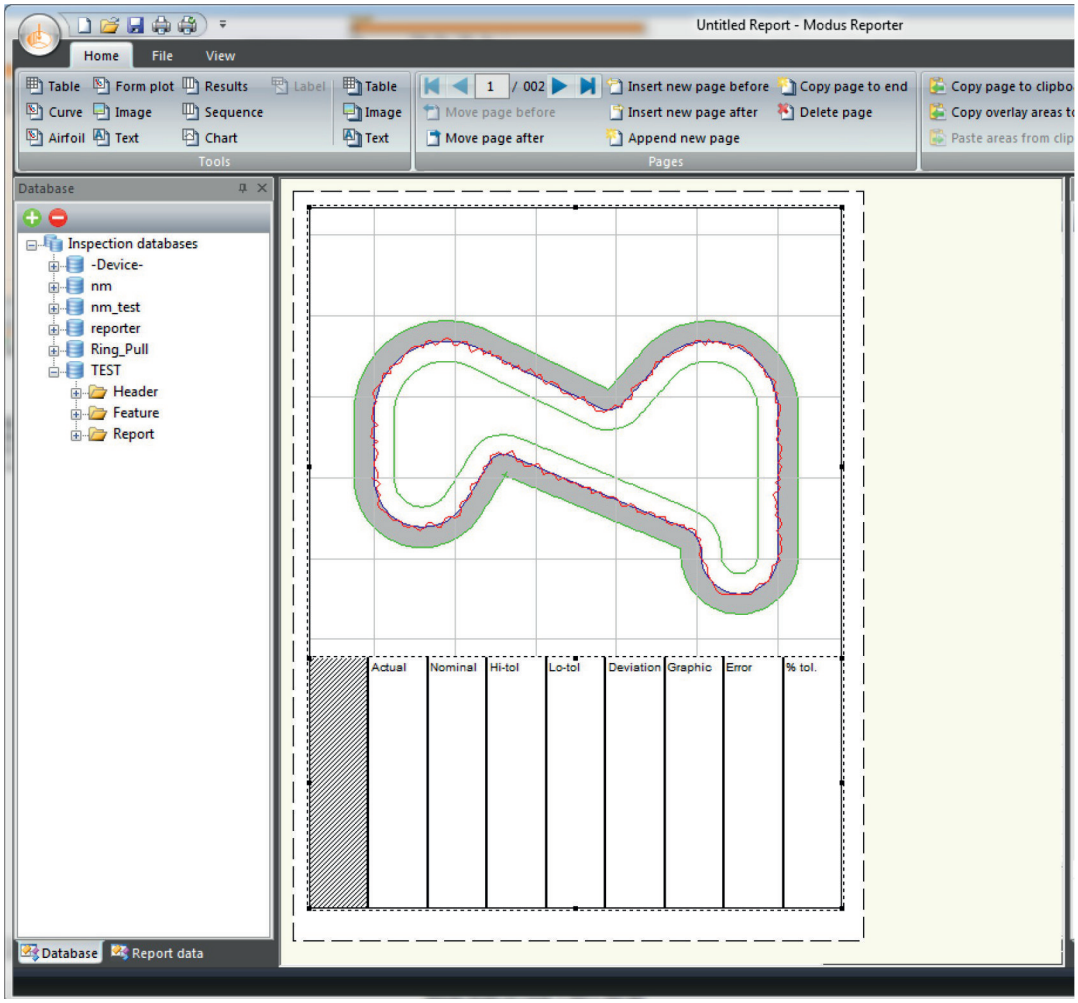
Bring in a ‘Results’ table and populate with output results:



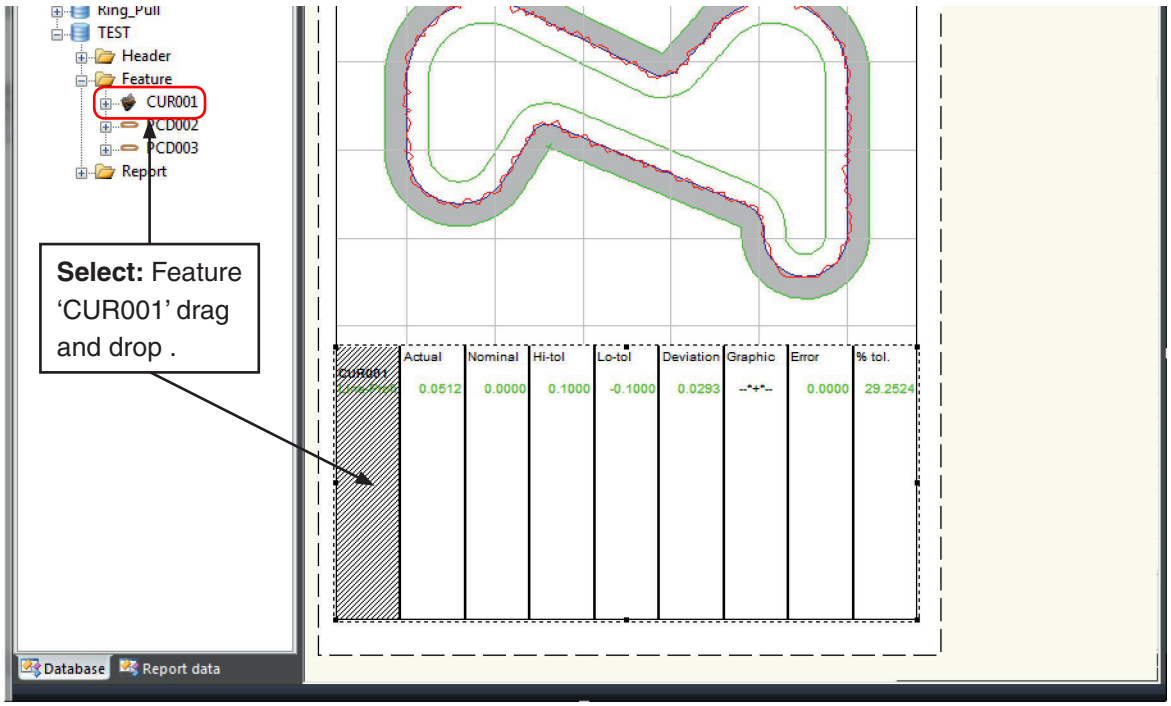
Select: ‘Results’ and draw box.



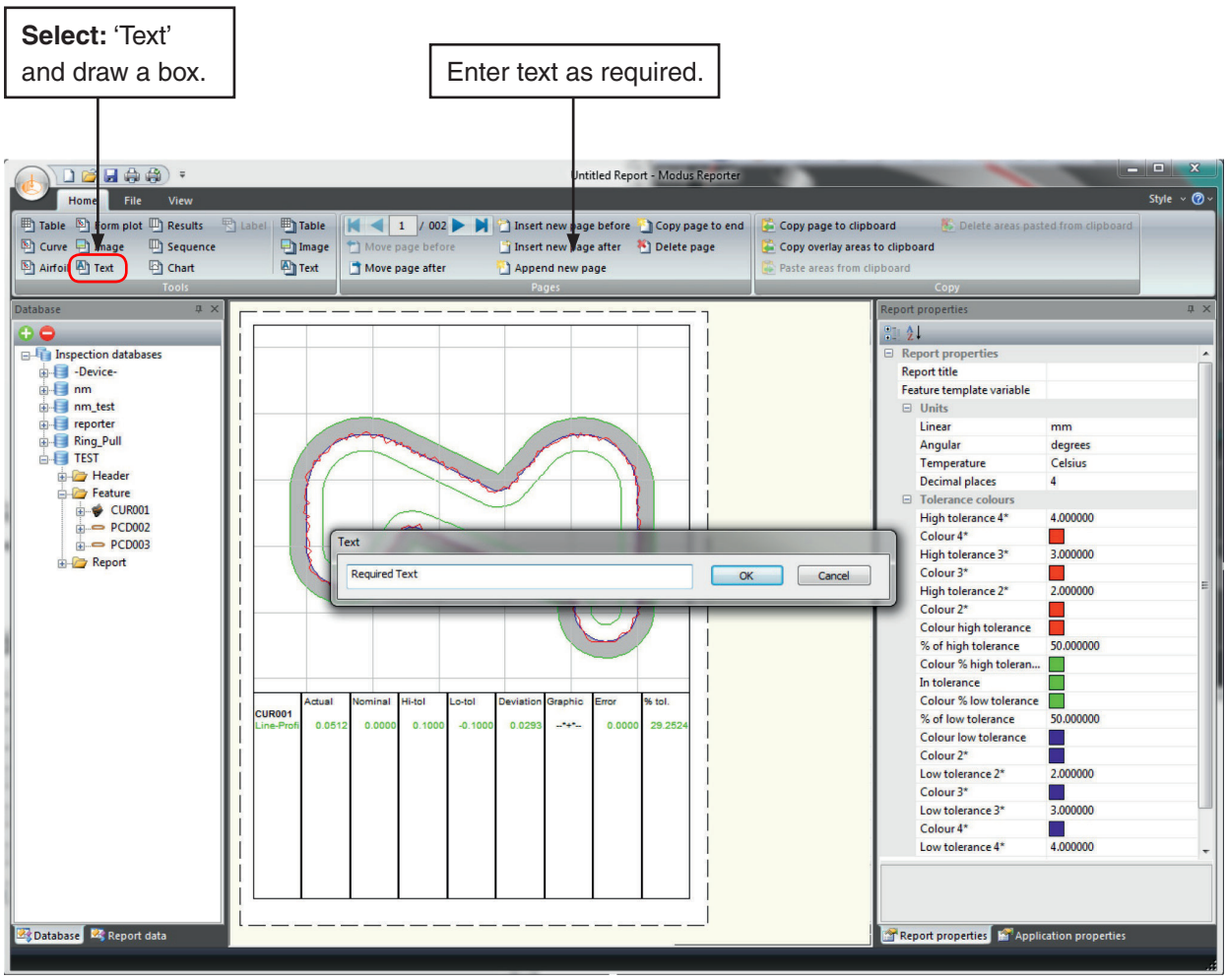
Click: ‘OK’.



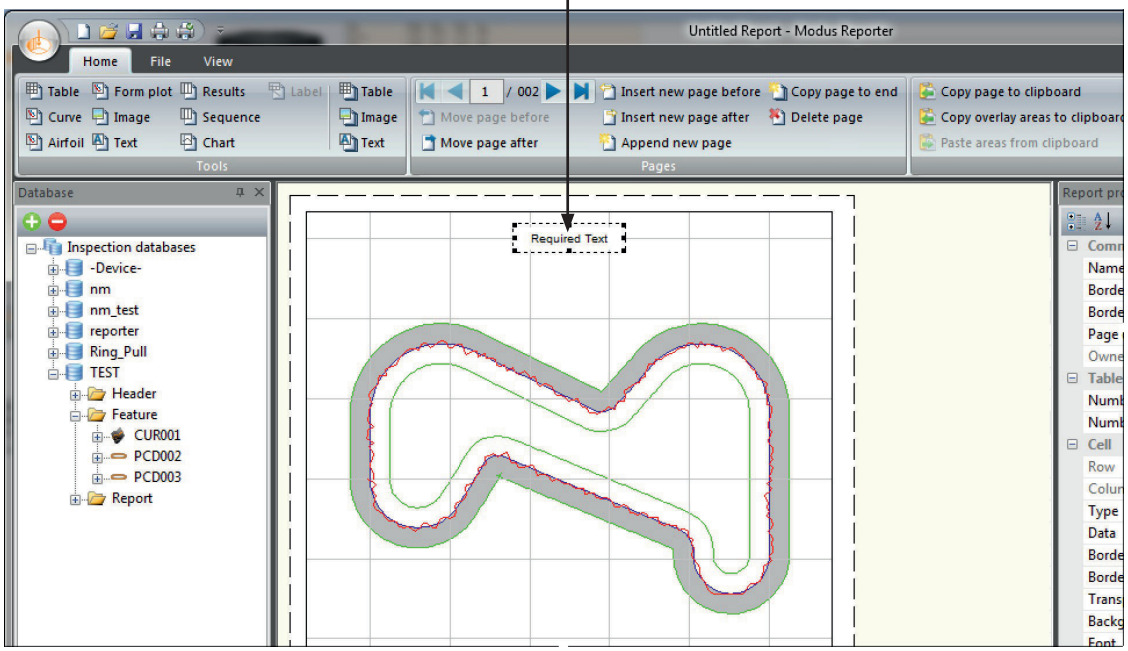
Now select the ‘Output Feature’ from the ‘Data Base’ to drag and drop into the created table:



Bring in a ‘Text Box’ to describe the feature:



Adjust size and location of ‘Text Box’ as required .

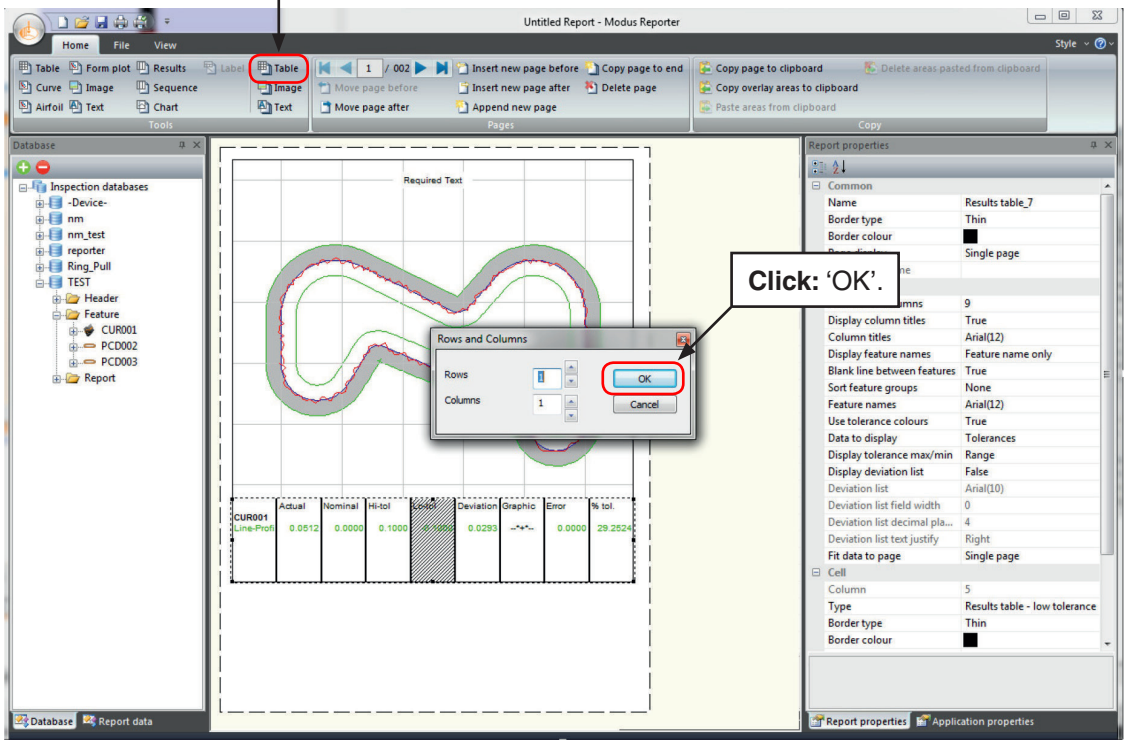


In order to add automatic page numbering, create a new ‘Overlay Table’ which will appear on multiple pages.

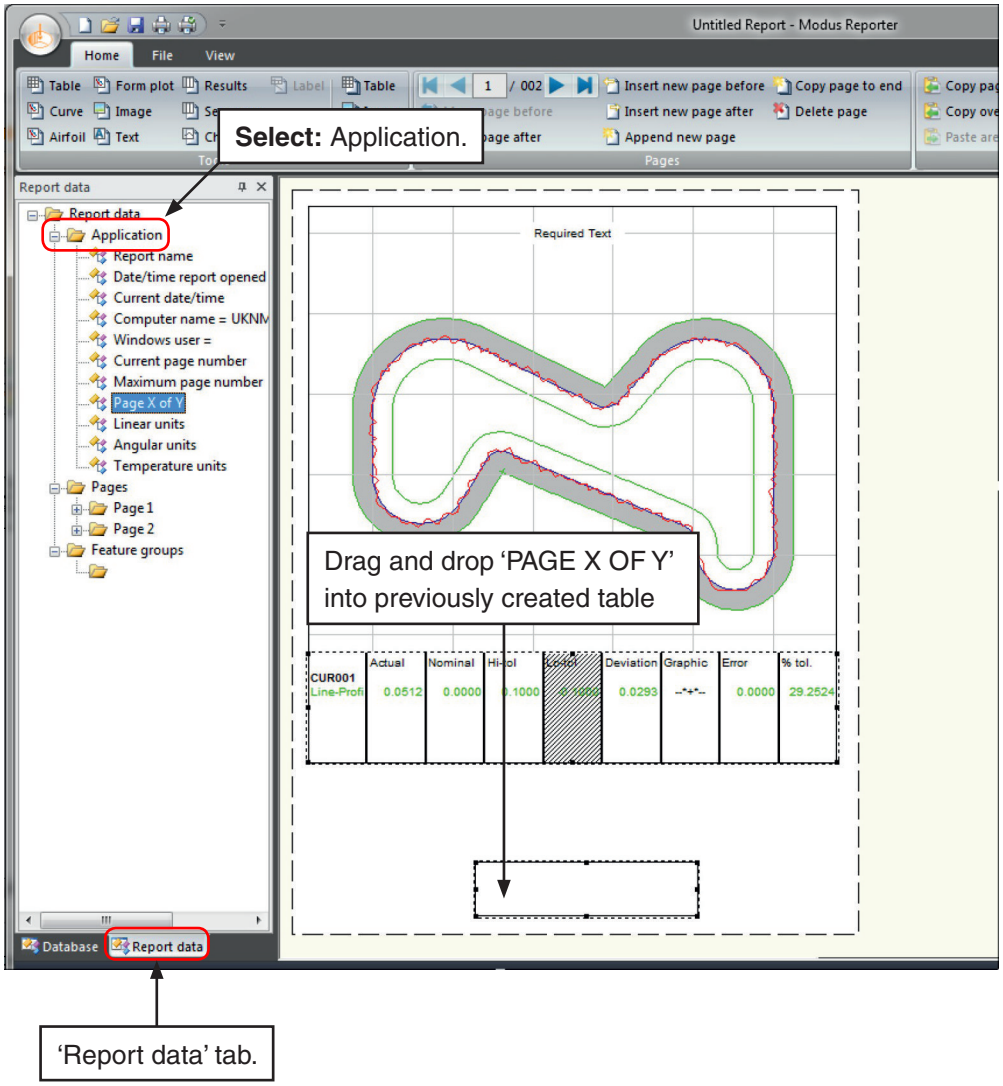
GUIDANCE NOTE: An overlay area is used to hold data that will be displayed on every page of the report.

Select: ‘Overlay Table’ from the tools menu, then draw a box in the required position.

Click: ‘OK’ to the column dialogue box.

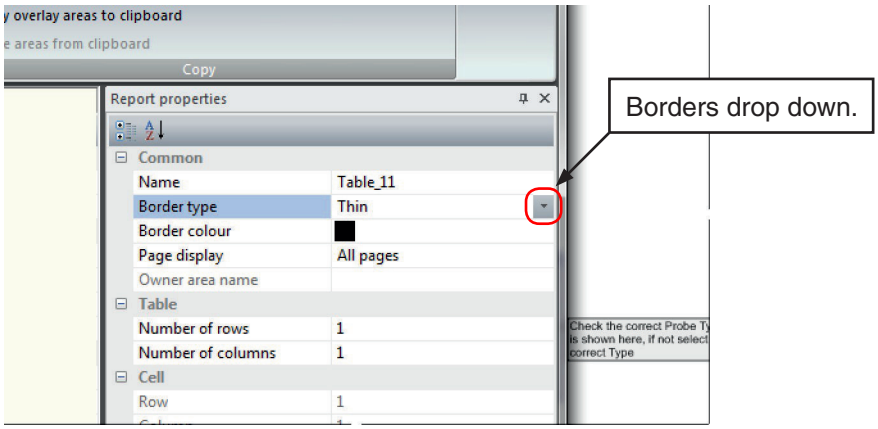


From the ‘Report Data’ tab, drag and drop the required data into the ‘Overlay Table’:

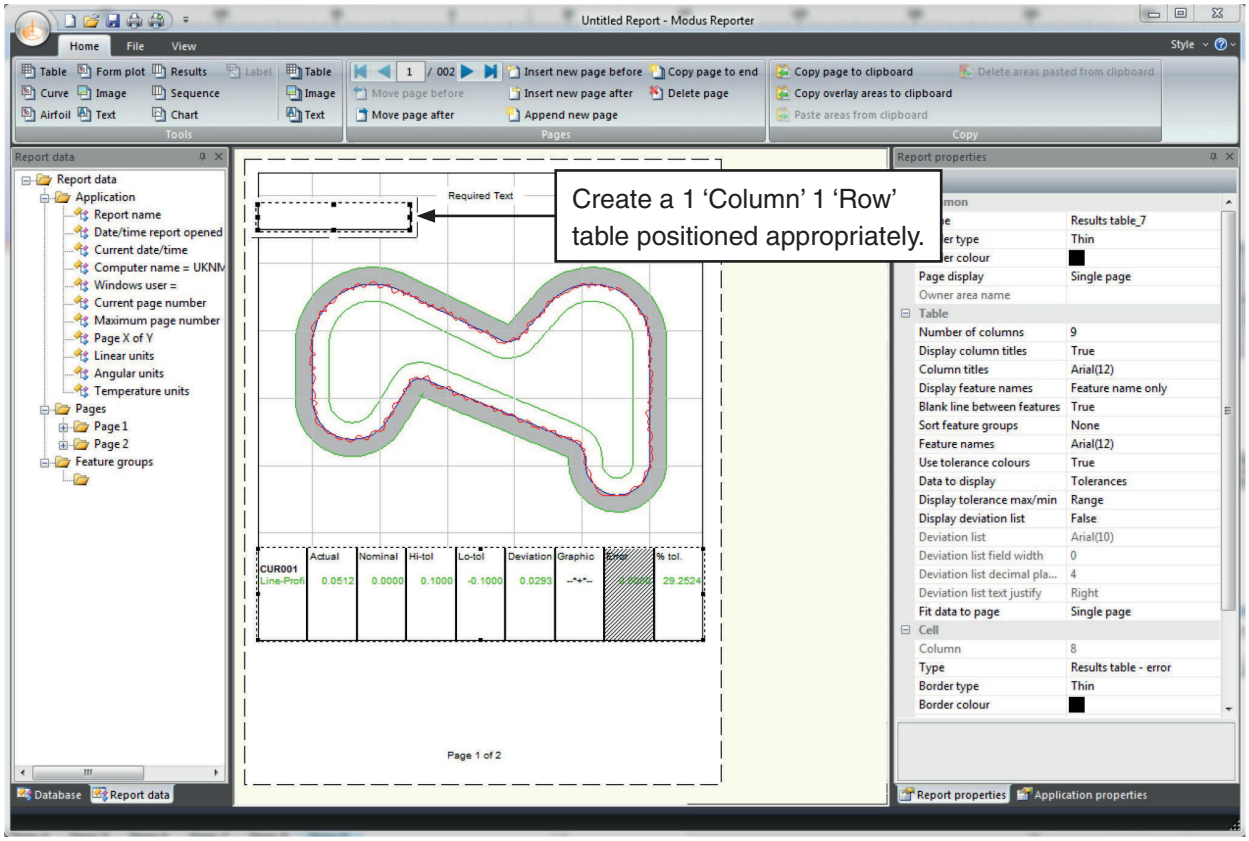


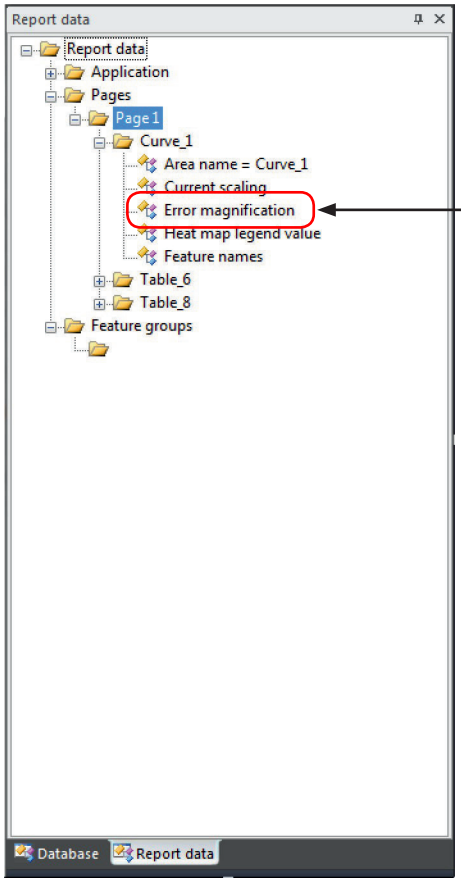
By selecting the ‘Overlay Table’ box created, the ‘Report Properties’ have become active

Now hide any borders as required:



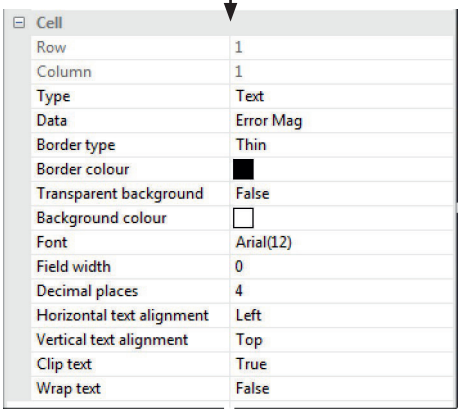
Display error magnification in the report:





Drag and drop 'Error Magnification' into previously created table

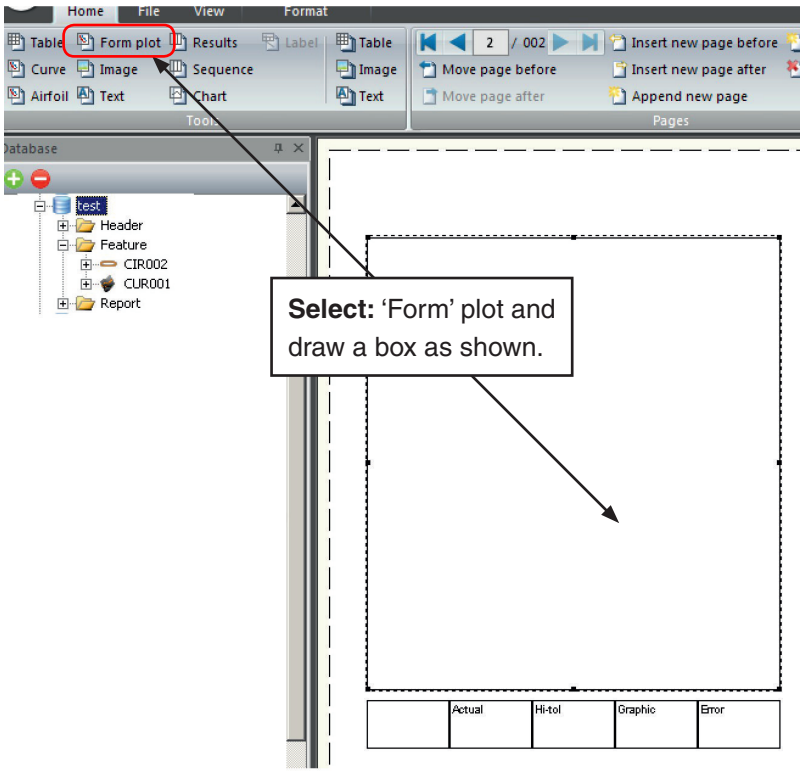
Properties of the table can be edited as required in this dialogue box.

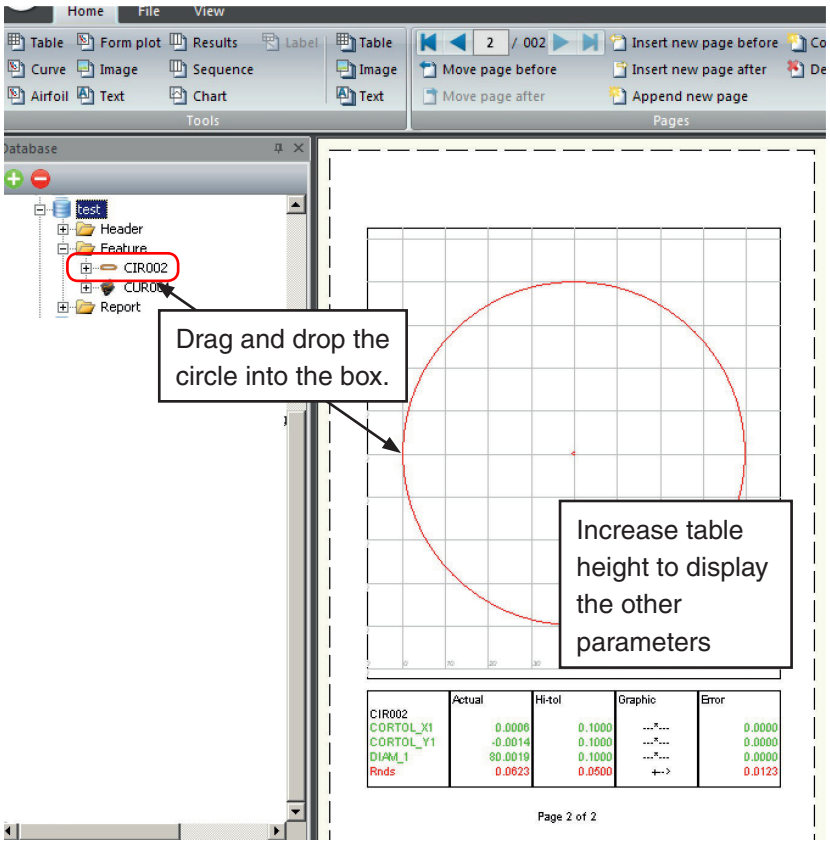


The report can now be saved / printed as required.

4 Creation and printing of a report for circular feature form plot

For this section of the tutorial, a circular feature must have been measured and outputted.

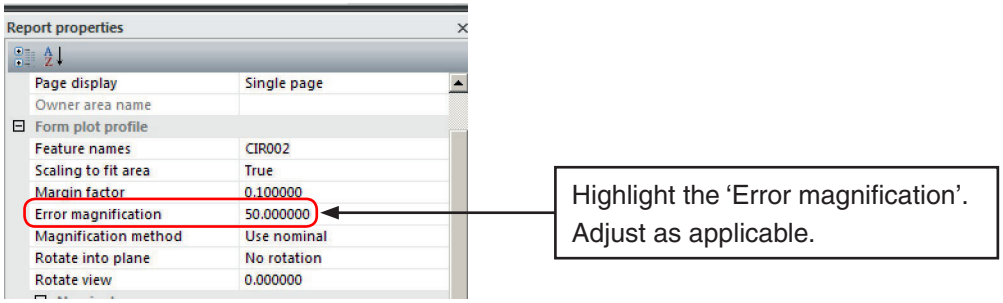


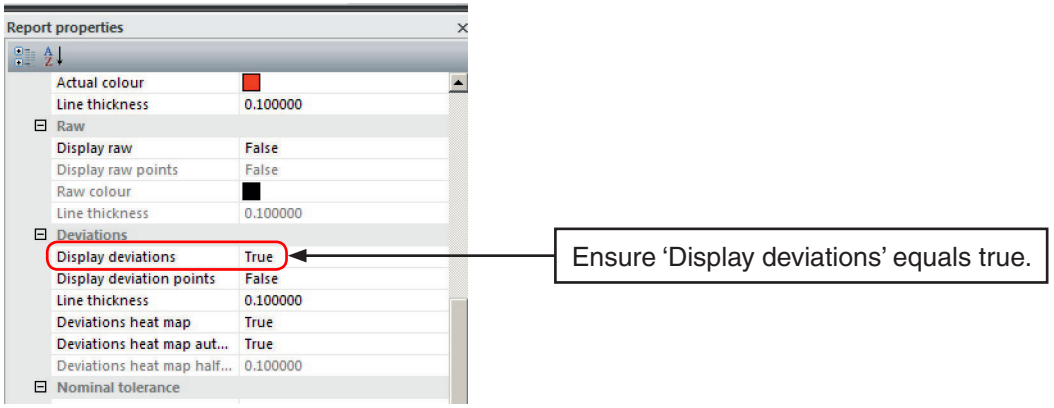


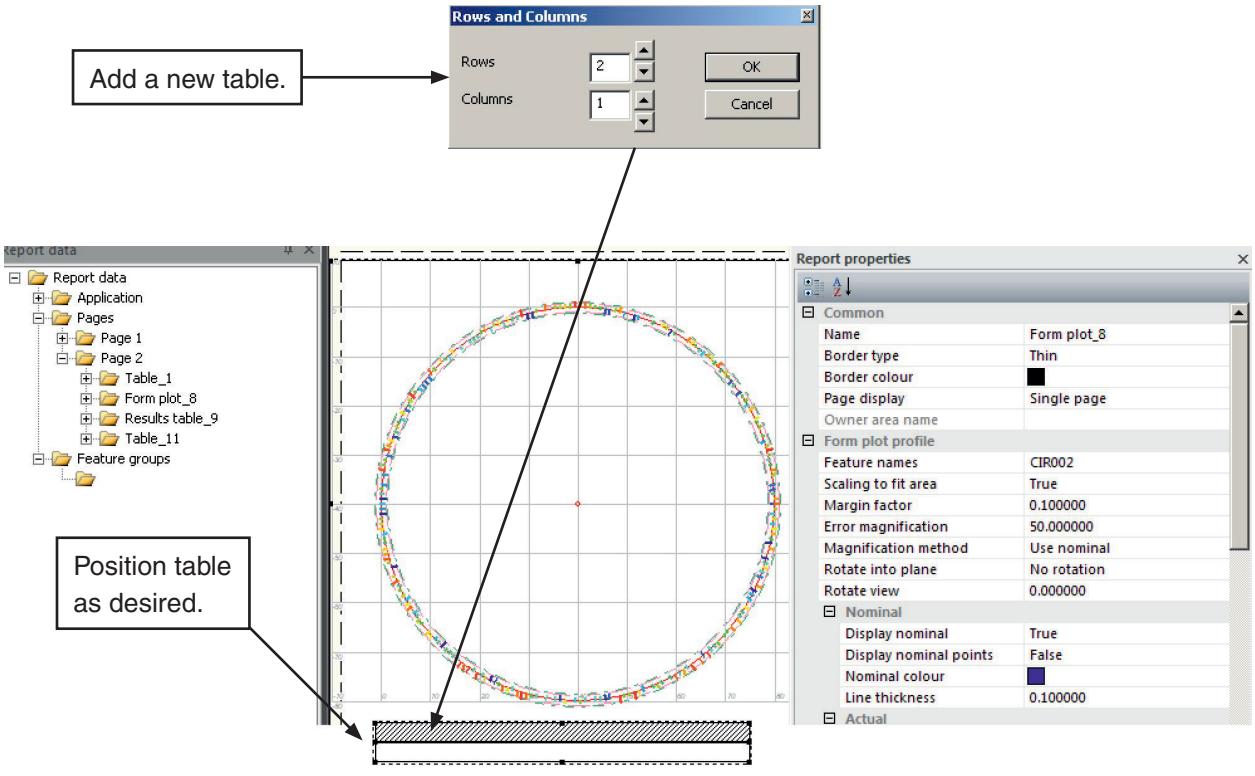
5 Deviation markers with heat map

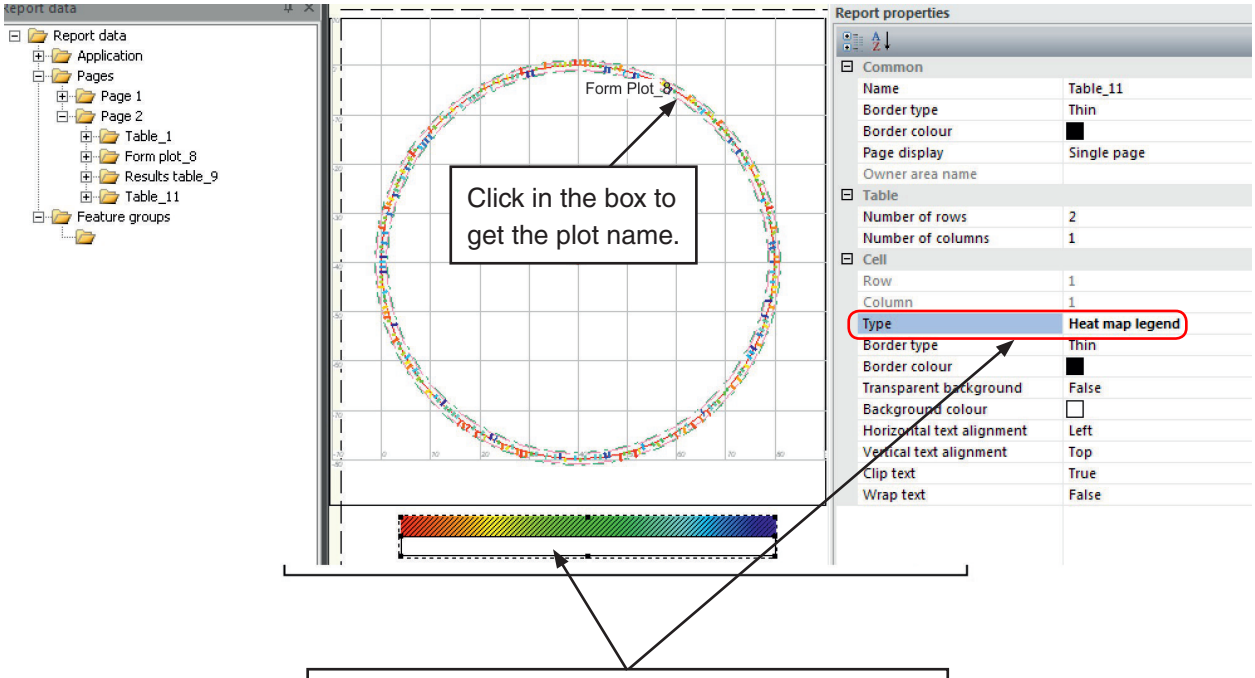
Deviation markers can be displayed in colour to provide a ‘heat map’ that visually indicates the degree of deviation from the nominal profile. This provides the greatest colour contrast in the report area. If this option is selected (i.e. deviations heat map is set to ‘True’ in the properties for the area), the degree of deviation is indicated using a colour gradient from red, through green to blue.

Properties can be adjusted as required:









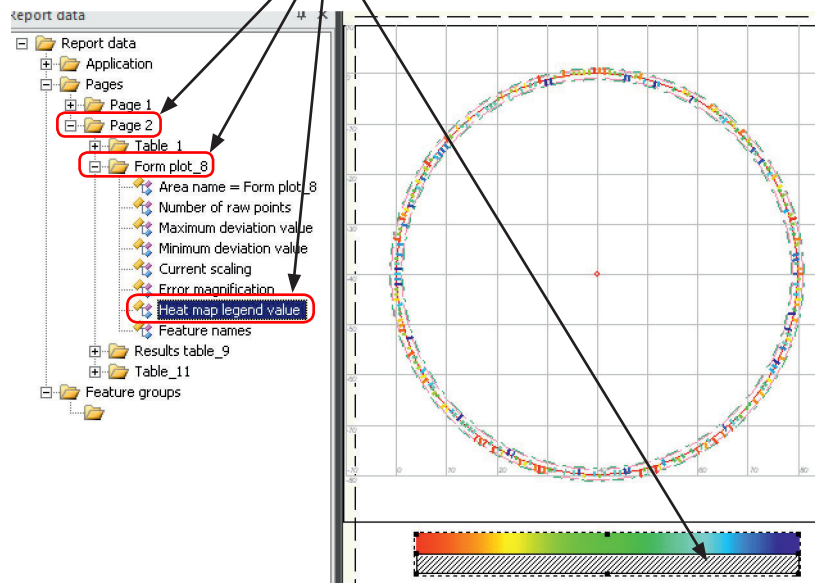
Select the top row of the table.

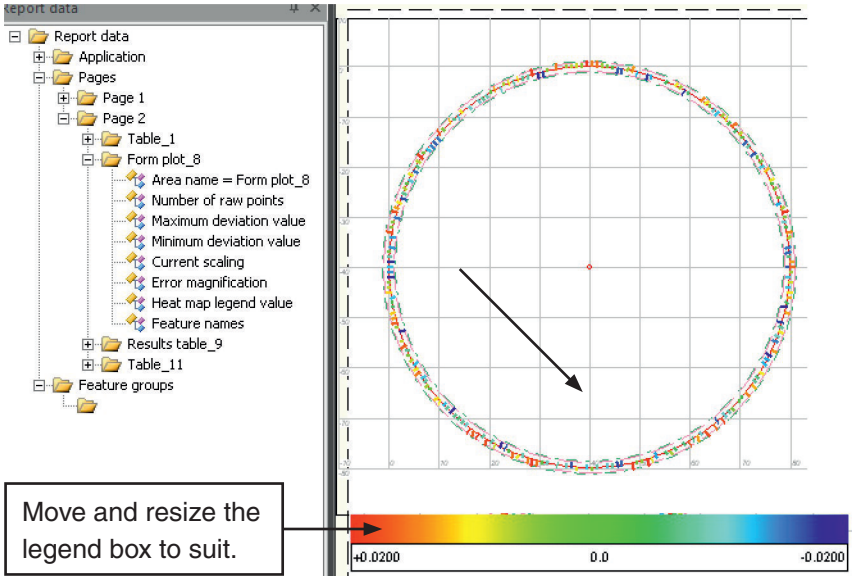
In the ‘Report properties’ box select ‘Type’ then select ‘Heat map legend’ from the drop down menu.

The legend will now appear in the table

Select the ‘Report data’ tab, ‘Page 2’ and then click on the recently created form plot.

Now drag and drop ‘Heat map legend value’ into the lower box.





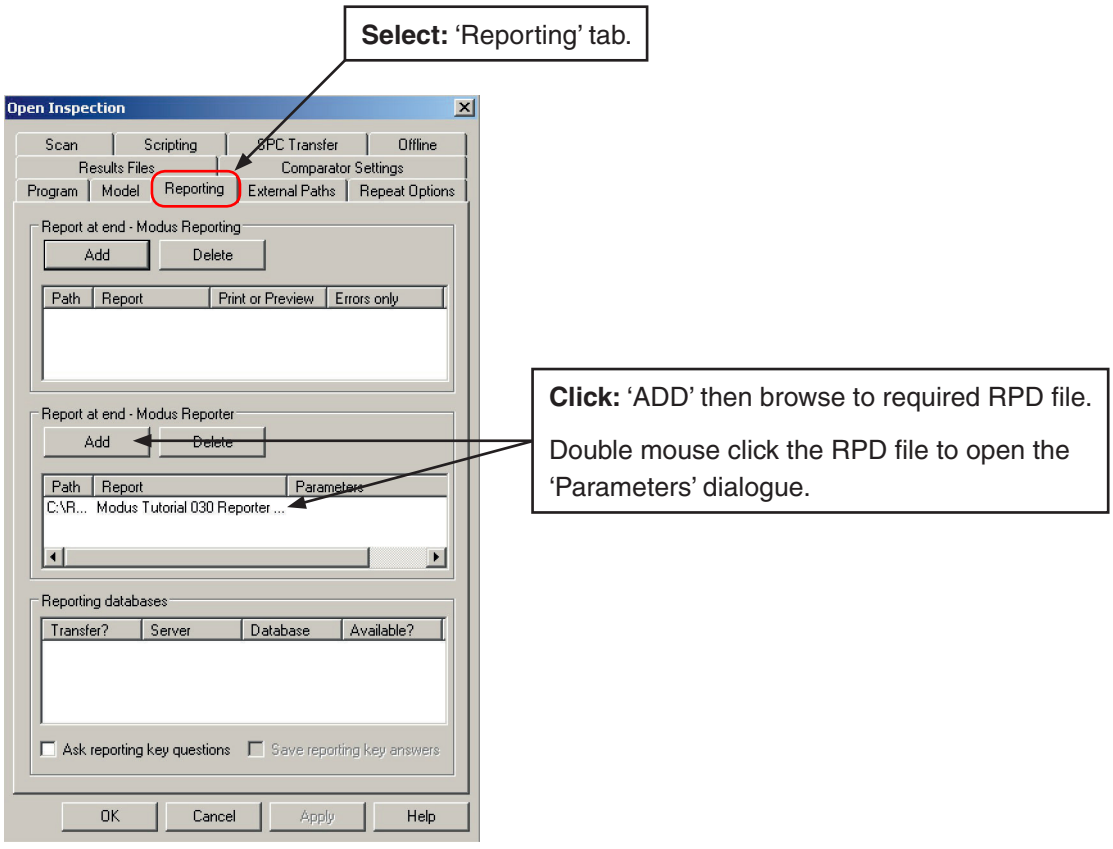
The table now shows the ‘Heat map legend’ maximum and minimum deviations from nominal.

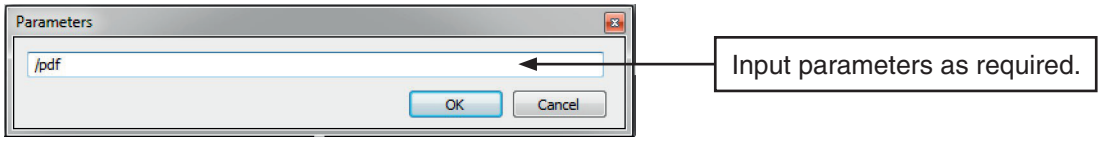
When completed save the template, this will create a ‘RPD’ file.

Then close it.

Now close and re-open the part program and set it to run ‘Reporter’ when the program finishes.

NOTE: The ‘ENDFIL’ instruction must be executed at the end of the program.





Basic parameter examples:

/p - Prints the report data to the default printer.

/pdf - Prints the report data to a PDF file, using the same filename as the report filename. Appends the data to the PDF if this already exists.

/pdf /pdfout "PDFname" - Prints the report data to a PDF file of the specified filename (enclosed in double quotes). Appends the data to the PDF if this already exists.

Example: /pdf /pdfout "C:\Renishaw\Reports\DataXXX.pdf".

Renishaw plc

New Mills, Wotton-under-Edge,
Gloucestershire, GL12 8JR
United Kingdom

T +44 (0)1453 524524
F +44 (0)1453 524901
E uk@renishaw.com

www.renishaw.com

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For worldwide contact details, please visit our main web site at www.renishaw.com/contact

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